

What is claimed is:

1. A method of generating a color conversion table for converting color data D to be processed by a first device  
5 into color data D' to be processed by a second device, comprising the steps of:

setting a constraint condition;

generating a color conversion table between at least portions of said color data D, D' according to said constraint conditions; and  
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generating a color conversion table between remainders of said color data D, D' in colorimetric association therewith.

2. A method according to claim 1, wherein said constraint condition comprises a condition for constraining a relationship for converting at least one primary color data.  
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3. A method according to claim 1, wherein said constraint condition comprises a condition for constraining a relationship for converting at least one secondary color data.  
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4. A method according to claim 1, wherein said constraint condition comprises a condition for saving halftone dot area percentages of particular ranges in said at least portions of said color data D, D'.  
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5. A method according to claim 4, wherein said particular range is established in a highlight area and/or a shadow area of said color data D, D'.

5 6. A method according to claim 4, wherein said constraint condition comprises a condition for equalizing the halftone dot area percentages of said particular ranges in said at least portions of said color data D, D', and a condition for gradually shifting halftone dot area percentages of junction ranges between said particular ranges and other ranges from the halftone dot area percentage of said color data D to the halftone dot area percentage of said color data D'.

10 7. A method according to claim 6, wherein said condition for gradually shifting the halftone dot area percentages of the junction ranges comprises a condition for interpolating the halftone dot area percentages of said particular ranges and the halftone dot area percentages of the junction ranges.

15 8. A method according to claim 1, wherein said constraint condition comprises a condition for saving dot gains of said at least portions of said color data D, D'.

20 9. An apparatus for generating a color conversion table for converting color data D to be processed by a first de-

vice into color data D' to be processed by a second device, comprising:

constraint condition setting means for setting a constraint condition; and

5 color conversion table generating means for generating a color conversion table between at least portions of said color data D, D' according to said constraint conditions, and generating a color conversion table between remainders of said color data D, D' in colorimetric association therewith.

10 10. An apparatus according to claim 9, wherein said constraint condition setting means comprises:

15 constraint condition storage means for storing constraint conditions; and

constraint condition selecting means for selecting the desirable constraint condition from said constraint condition storage means.

20 11. An apparatus according to claim 9, further comprising:

color conversion table storage means for storing a color conversion table in colorimetric association between all said color data D, D';

25 said color conversion table generating means comprising means for modifying said color conversion table into a new color conversion table based on said constraint condition.

12. An apparatus according to claim 11, wherein said color conversion table storage means comprises:

a first profile storage unit for storing a first profile representing a conversion relationship between said color data D and colorimetric data; and

a second profile storage unit for storing a second profile representing a conversion relationship between said colorimetric data and color data D'.

13. An apparatus according to claim 12, wherein said first profile comprises a profile established depending on printing conditions of a printing machine, and said second profile comprises a profile established depending on output conditions of a printer.

14. An apparatus for generating a proof by converting image data composed of color data D to be processed by a first device into image data composed of color data D' to be processed by a second device, using a color conversion table, and generating a proof of an image produced by said first device with said second device, comprising:

constraint condition setting means for setting a constraint condition;

color conversion table generating means for generating a color conversion table between at least portions of said color data D, D' according to said constraint conditions, and generating a color conversion table between remainders

of said color data D, D' in colorimetric association there-  
with;

color converting means for converting said color data D  
into said color data D' using said color conversion table  
5 generated by said color conversion table generating means;  
and

proof output means for outputting said proof based on  
said color data D'.

10 15. An apparatus according to claim 14, wherein said  
constraint condition setting means comprises:

constraint condition storage means for storing con-  
straint conditions; and

15 constraint condition selecting means for selecting the  
constraint condition from said constraint condition storage  
means.

16. An apparatus according to claim 14, further com-  
prising:

20 color conversion table storage means for storing a  
color conversion table in colorimetric association between  
all said color data D, D';

said color conversion table generating means comprising  
means for modifying said color conversion table into a new  
25 color conversion table based on said constraint condition.

17. An apparatus according to claim 14, wherein said

proof output means comprises a printer.

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